

ABSTRACT

A turbine blade for a turbine engine having a cooling system in at least the tip portion of the turbine blade. The cooling system includes one or more vortex chambers in a tip section of the blade. The vortex chambers receive cooling fluids from metering slots that provide a pathway between internal cooling cavities of the blade and the vortex chambers. The cooling fluids may be exhausted through one or more film cooling holes. The vortex chambers, metering slots, and film cooling holes may include a tip cap attached to the tip section of the blade. At least a portion of the vortex chambers, metering slots, and film cooling holes may be formed from impressions in the tip cap or the turbine blade, or both.